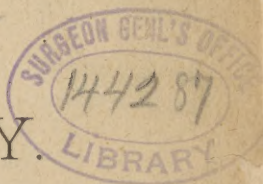


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REIGN OF HIS MAJESTY KALAKAUA, 13th YEAR.



REPORT OF THE PRESIDENT
OF THE
Hawaiian Islands.
BOARD OF HEALTH,
TO THE
LEGISLATIVE ASSEMBLY
OF 1886, ✓
ON LEPROSY.



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OFFICE OF BOARD OF HEALTH,
HONOLULU, APRIL 30th, 1886.

Nobles and Representatives:

When, twenty-one years ago, (January 3, 1865,) the Legislature of this Kingdom enacted the law "to prevent the spread of Leprosy," it was provided that the Board of Health,—the Department authorized to carry out its provisions,—should report to the Legislature at each of its regular sessions, the expenditures in detail, *together with such information regarding the disease of leprosy, as well as the public health generally, as it may deem of interest to the public.*

During the twenty years and over that have elapsed since the passage of the Act referred to, and the compilation of the now famous Report of the College of Physicians of England on leprosy, obtained at the instance of Her Britannic Majesty's Government, the study of the disease, that has prevailed, and to a great extent, still prevails so virulently in this Kingdom, has been pressed with unremitting zeal and perseverance in nearly every country by men of medical and scientific attainments. By degrees, through unceasing and watchful labor, by comparison of information and in-

terchange of experiences, experiments and thought, and to no small extent perhaps, also, by uplifting the heavy curtains of past centuries and unrolling the scrolls penned by those familiar with this disease, thousands of years before the birth of the Saviour of Man, and by the material aid of practical common sense joining its forces to those of medical science, the latter prone, alas, at times to be blindly self-assertive, dogmatic and tyrannical as much so to day as in the day of Hervey, Jenner, and other great pioneers in medical thought—the world has learned much, and the indications are that knowledge is increasing so steadily and favorably that we are almost half justified in hoping that, at the end of the next quarter of a century, the time will then be not far distant that a controlling power shall be found for that disease of which one Atreya, who wrote, in India, probably more than 4000 years ago, said *“The man who neglects the disease at its commencement is sure to die, for it becomes incurable.”*

With these facts and thoughts present in my mind, I have deemed it a duty I owe, as the President of the Board of Health, to the Hawaiian nation, and in that spirit of benevolence to the sufferer, be he Hawaiian or foreigner, which has been one of the marked features of the Hawaiian race and its rulers, and especially so during the present reign, to make a more extended Report to your Honorable Body than has hitherto been customary. I have done so in the fervent hope, that under the Divine Will, good will result not only to this nation but to other parts of the world at large, suffering alike with Hawaii.

I have endeavored to present to you, in so far as a pressure of duties and limited opportunities permitted, the knowledge and information, in regard to leprosy possessed by many other countries, compiled and collected by the Governments of those countries expressly for His Hawaiian Majesty's Government, at my invitation, and, in some instances, bearing date as recently as the present year. To these governments the Hawaiian people should be grateful.

In this Report, taken in connection with the Supplement, I aim to lay before you the history of the disease in these Islands so far as it is to be found in the official records of the Board of Health and other sources, and so far as my researches and my experience as a resident of a quarter of a century in the Kingdom permit. In the Appendix you will find the results of the labors, and the opinions and suggestions of the medical men and others, who are, or have been, engaged on these Islands since the presentation of my last report, in combating the disease, attending to the sick, ameliorating their sad condition or soothing their dying hours. I am convinced that a careful study of the material presented to you will not only aid your deliberations on behalf of the suffering and sick among the Hawaiian people, and encourage hope in your breasts and theirs, but it will also show you that the Hawaiian nation, acting through those who have been entrusted, from time to time, with the administration of its affairs has done nobly, and generously in the front of a great calamity, and has dared more, and expended more money in proportion to the size and wealth of the country in the attempted suppression of this most lamentable malady than greater, more powerful and wealthier countries have yet attempted. It will, I trust, tend to preserve in you that true kindness of heart, and that spirit of compassion towards the poor and suffering, that were the pride of your ancestors, and which—bloody and cruel though they may have been in battle—led them more rapidly on the pathway of enlightenment, civilization and patriotism than any other race similarly constituted and situated as was the Hawaiian when the foreigner first reached these shores.

A wise and eloquent writer has said; "that no nation can go forward that has no past at its back." Hawaii has both a past and a history in which may not only be traced the germs and causes of its progress, but possibly also the source of the disease, so far as this

country is concerned, which forms the sad subject of this Report. The Kingdom of Hawaii in its political, social and religious life in the transition "from feudal anarchy and general lawlessness to personal despotism and stringent repression, and from that to a constitutional monarchy; from social barbarism to a degree of civilization that is unexampled in the history of mankind, considering the time that has elapsed; from the most cruel and oppressive idolatry to the spontaneous repudiation of the idols and the adoption of Christianity" owes its initial movement on the road of national progress to Kamehameha the Conqueror. It is true as Fornander says: "The dark shadows which flit across its pages are dark indeed, but they are no darker than those which, under even more favorable circumstances, have stained the annals of many a proud nation that formerly stood, or now stands, in the foremost rank of civilization." That during this extraordinary political and social revolution the shadows were not darker is due to the warrior-king. There would seem to have been a marked dispensation of Providence in the selection of Kamehameha the First to direct the chain of events during this marvelous transition period which succeeded the union of the islands under one spear and sceptre and the coming of the white race. The Kingdom had the advantage of a ruler of marked and heroic character as its founder; a man of vigorous and active intelligent thought, endowed with a strength of purpose and power which, had it been directed merely to personal aggrandizement and to sensual and sensuous existence, would have made him a cruel and selfish tyrant, and have placed these islands either in a state of continual insurrection, or of servile debasement and degradation, to fall an easy prey to the foreign conqueror or aspiring adventurer, as we see to day is the condition of other islands in the great ocean that surrounds us. Fortunately he was destined to set an example to his successors as favoring the establishment and development of this Kingdom as an

Independent State. He appreciated, and herein may be found one of the marked reasons of his special success and the proof of his enlightened spirit, the value of recognizing and acting upon the proffers of friendly reciprocation and association with the Caucasian race and of learning from them the arts of peace rather than the practice of war. He accepted their teachers and traders as his tutors and councillors, and amity and advice begat knowledge throughout the land. Hence it is that since he ascended the throne of United Hawaii, we have no bloody record of internecine wars, of struggles between race and race; of hatred, open or covert; of plots and counterplots between the native population and the strangers; but, on the other hand, calm consultations, friendly co-operation, and active associations intimately connected with the advancement of the country. Hence also, to-day, the Hawaiian State stands solid and independent before the world, so established by the wisdom of its native chiefs, aided in its organization and progressive development by a loyal and zealous white element who have become heartily and honestly Hawaiian in disposition, interest and social kinship, and as closely identified with the welfare of the land as though it were the birthplace of themselves and ancestors, rather than a land of adoption.

The spirit of Kamehameha and his advisers developing and becoming enriched by civilization and intelligence descended to his royal successors until, under our present Sovereign Kalakaua, the second transition era may be said to have arrived, since, from the King downwards, the generations of to-day have been educated—not under the old Hawaiian system, but under the influence of Christian and Caucasian methods and ideas. The puny neglected islands of the Pacific hailed, scarcely a century ago, as merely a new acquisition for a missionary station, or a half-way inn for sailors, are rapidly gaining recognition as worthy to be ranked and received among the most powerful and enlightened Sovereign States of the world, as being fruitful of good deeds in peace, though powerless in war.

In this half-won struggle for advancement, Hawaii has undergone, and is still undergoing, the stern trials attaching to all rising nations. She has been heavily handicapped in being stricken with the terrible and deadly disease of leprosy and with other maladies that have carried off her people by the hundreds of thousands. Elsewhere I shall speak of the lives we have lost and the treasure we have expended on account of these visitations.

But why should these Islands have been so signally afflicted? There must be a cause for it. In these days we cannot be content with the explanation of the middle ages that it is the wrath of God.

In view, then, of the great and bewildering masses of information gathered by medical men as to the causes of leprosy, and in view also of the many published errors in regard to leprosy in this Kingdom, let us search for a sensible cause practically, and not as professionals pledged to individual schools of thought or line of experiments. Let us do it in a friendly attempt to aid science and not to baffle it or ourselves, and not in an assertive but in an enquiring mood, having for our main object the elucidation of facts and the alleviation of the misery of our suffering countrymen.

Whoever will studiously peruse the very numerous medical statements which accompany this report, will observe that each of the propositions I am about to place before you can be answered as readily in the affirmative as in the negative, and with probably an equal array of argument on either side. Let us make these propositions then, thus:

It is impossible to attach to this Hawaiian race and to these Islands any distinctive feature as a character or cause of the disease.

It will not do to say that it is owing to an admixture of foreign races predisposed to the disease, or to inbreeding producing scrofulous races, or that the race is in itself predisposed to scrofula, malaria and many other assistant diseases.

It will not do to say that it proceeds from climate, from the diet of the country or from want of cleanliness.

It will not do to attribute it to any of these causes, solely or conjunctively, for the unfortunately baffled medical world repeatedly points out to us that all these conditions exist in non-leprous countries and races. I will, however, presently review all these conditions as they are found amongst us, and see whether or not they can be made actually applicable to us wholly or in a degree.

About the great hold that leprosy has taken upon this nation, there is no doubt; but as to when it first began its ravages here there is very grave doubt, and in the ascertaining of the era of misfortune may be found a solution of one portion of the perplexing problem. Although it has been stated by our best medical observers that the disease is but a recent comer among us, and dating back not more than 40 or 50 years ago, I am strongly disposed to join issue with them.

THE INTRODUCTION OF THE DISEASE.

It has been asserted by the early authorities that leprosy was introduced by a Chinaman, and consequently was called the *Mai Pake*, or Chinese sickness, as native Hawaiians could find no better name for the disease in their vocabulary. I do not believe it was introduced by a Chinaman, any more than I believe it was imported from China by the warrior chief Keawe Kaiana-a-Ahuula when he made his voyage with Captain Meares in 1787. I might, *en passant*, enquire how it is that if one Chinaman caused such an alarming spread of the disease thirty or forty years ago, there are now, comparatively speaking, so very few cases of leprosy among the seventeen or eighteen thousand Chinamen on these islands, and no recorded cases, that I am aware of, of an imported Chinese leper since the enactment of the anti-leprosy law. Again, if the disease had been introduced by the Chinese, and propagated by them in proportion to their intimate connection and

association with the females, especially young children, of the native race, I should expect to find a much larger proportion of females than males affected with this loathsome malady, and yet we all know that the contrary is the fact, in spite of the census of 1884 giving only 18,220 females over 15 years of age to 17,000 male Chinese of all ages.

To those, who are intimately acquainted with the Hawaiian language, the mere fact that there is not a distinctive word in the language argues nothing, inasmuch as the idiom is remarkably deficient in medical nomenclature, consequent upon the absence of any regular study of the human system or ailments. The Hawaiians possess generic words for the pains or sensations attaching to the several classes of sickness to which they are most prone, such as: *Mai wela*, hot sickness; *mai anuu*, cold sickness; *mai puupuu*, lumpy sickness; *mai ulalii*, sickness of small red spots (measles), and so on. I believe that there is enough of assurance in the general opinions of intelligent Hawaiians that the disease has existed here for a much longer period than usually accredited. Old natives speak of a disease in the past, attended with swellings, disfigurations, insensibility and ulcerations, and which diseases correspond with what medical science calls *Elephantiasis Arabum*, and not true leprosy; but there is, nevertheless, some ground for the presumption that the *Elephantiasis Græcorum*, or true leprosy, existed since ancient times. However, in the absence of fact this is only surmise. But in this connection an interesting extract from the diary of Rev. C. S. Stewart, 1823, will be found in the report of Dr. Mouritz, on page LXXIV, Appendix K. On P. XXVIII of Appendix E, a well defined case of leprosy in 1845 is mentioned, and cases might be given dating back into the Thirties. I am inclined to think that the disease escaped the notice of the early missionary medical writers owing to the fact that their want of knowledge of its true symptoms and correct diagnosis led them to place it within the definitions of venereal

and scrofulous ailments. Their writings and opinions are, however, to a certain extent valuable, and it is only fair that we should consult them in our desire to learn all we can in regard to the various causes assigned and the circumstances attendant upon the uprising of this disease in its peculiar virulence. Let us then turn to these, the earliest of our foreign observers, and see what they had to say in regard to the inhabitants of these islands within ten and twenty years of the date of the landing of the first American missionaries in 1820. They write freely about the diseases and condition of the people, of their food, their customs and their morals in the era before which, modern writers would have us believe, leprosy began its ravages among our people.

THE NATURAL PHENOMENA OF THE ISLANDS.

But first, as regards climate, which some writers think is a potent factor in the disease, I cannot do better than quote from Dr. Alonzo Chapin's description republished from the "American Journal of Medical Sciences" in the "Hawaiian Spectator," of July, 1838. Dr. Chapin says: "Situated in the very midst of the vast Pacific, without any extensive inland causes to affect the temperature, and remote from the cold chilling winds of the temperate and frigid zones, the Sandwich Islands possess a remarkable evenness in the degree of atmospheric temperature. Cool breezes, by day from the sea, and by night from the mountains, serve to mitigate the burning heat produced by a vertical sun, and to render the climate pleasant. The thermometer varies but little from day to day, and even from month to month; and what is particularly to be remarked, all portions of the islands, along the shores, are alike in this respect. Districts most parched by heat and drought do not differ essentially in temperature from those sections where almost daily showers and perpetual trade winds prevail. As we recede, however, from the low lands along the sea and ascend the mountains, a

change is immediately perceived, and along their extended sides we may procure almost any degree of temperature. The greatest heat marked by the thermometer at Honolulu was 88° , lowest 59° , and range 27° .

In dealing with the telluric agencies and physical conformations of the islands I prefer to again quote from the same distinguished medical authority who says: "The interior of each island is uniformly elevated, and among them are found mountains of the first order of elevation. Those on Hawaii rise to the height of about 14,000 feet and have snow on their summits a great part of the year. The whole group are of volcanic origin. Numerous extinct craters of different periods and dimensions are scattered over the surface, and two large volcanoes are still in action, affording immense currents of liquid lava. The shores of the islands are much diversified, and furrowed with frequent ravines, some of great depth, which furnish courses for the impetuous mountain streams. Plains of different dimensions, varying from a few rods to many miles in extent, are frequent. More commonly, however, the mountains extend with a gradual slope entirely to the beach, and here and there present bold and black lofty precipices to the dashing of the wave. The sides of the mountains, if we except the loftiest, are verdant entirely to their summits, and present immense tracts of exceedingly fertile soil. The leeward shores have generally an arid and even sterile aspect, owing to the infrequency of rain. Vegetation is there promoted mostly from irrigation from the streams, and it is only the tracts immediately contiguous to these which possess much verdure, or will admit of cultivation. The condensation of the vapor, from the damp trades in their passage over the mountains, produces continual rains on their summits, which, extending backwards towards the sea, keep the earth wet much of the time, and give rise to a luxuriant growth of vegetation. Hence the windward sides of all the islands are, unlike their lee-

ward shores, extremely fruitful and productive. * * * The streams originate from springs and rains on the summits of the mountains, pour down their sides with great impetuosity and after a few meanderings are turned aside from their course to irrigate the lands and replenish the fish ponds, or are discharged directly into the sea; and I know of no body of water emitting sufficient miasma to create sickness along its borders. I have occasionally met with stagnant ponds, which emit a foul and offensive odor, and could in no way satisfy myself of the reason for the exemption of the inhabitants along their borders from fevers, but by supposing the effluvia to be diluted and rendered inert by the continual currents of winds. Small marshes abound but are fed by springs, and the pure mountain streams, and are thus prevented becoming noxious. They speedily dry up during a few weeks absence of rain; and the rivers also disappear unless kept alive by frequent showers, and the small pools, which remain at such times and which abound after every rainy season, do not become sufficiently putrid to exhale a *fever-generating* miasma. If any one variety of *soil* has a specific power to produce malaria it does not appear to exist at those islands. The upland soil is there formed of decomposed lava, the lowland plains along the sea are constituted of a mixture of alluvion washed from the mountains, and decomposed coral. Its immunity from noxious exhalations is the same, whether parched with drought, or merely moist, as when the evaporation is most abundant after the rains."

The native food next claims our attention. The staple article of diet as described by Chapin was *poi*. "The *Arum Esculentum*, which is more generally eaten by the inhabitants than any other vegetable, grows like the *Arum triphyllum*, in wet or damp situations only, and when uncooked, is, like that, exceedingly styptic and acrimonious. These qualities are destroyed by heat. The natives prepare it for use by cooking it thoroughly, pounding it to a pulp, and adding water sufficient to

make a thick paste, in which state it is called *poi*; and thus prepared, it is eaten with one or two fingers, according to its consistency. As an article of diet it is simple and nutritious; and after the fermentative process has commenced it is preferred by the people."

The sweet potato, the *pala*, a fern root, the tops of the *pulu* fern, the bread fruit, the cocoanut, the candle nut, the banana, many varieties of sea weed, along with a great variety of fish and crustacea, eaten raw, and the meat of the hog and dog, baked in the earth, constituted the chief articles of ancient Hawaiian diet.

EARLY DISEASES OF THE HAWAIIANS.

Having thus touched upon three "influential factors" let me pass on to what these writers say in regard to the diseases which, according to their information and opinions, afflicted the Hawaiians in those days. Dr. Chapin says: "The equableness of the climate, and the simplicity of the natives in their regimen and most of their habits of life, are compared with *civilized* countries, such that the variety of their diseases is neither numerous nor complex. Their remoteness from other lands is so great that but few contagious diseases are imported among them. * * * The diseases most common within my circle of observation, were fevers, ophthalmia, catarrhs and asthma, rheumatism, venereal diseases, diarrhœa, dysentery, cutaneous diseases, scrofula, dropsy, etc., and they occurred in frequency and in about the order in which I have mentioned them. Diseases sometimes occur epidemically, as was the case with catarrh repeatedly, and croup once during my residence at the islands. Many other diseases, not specified, were often met with. Fevers.—Though this is the most frequent and numerous class of diseases among the native population, they are by no means the most malignant and fatal. They occur in almost every form, but when idiopathic are usually remittent. They are, however, most frequently symptomatic of other diseases. The excitable state of the system, which predisposes

so strongly to febrile attacks is not common to these islands. *The continued and oppressive heat is there not sufficient of itself to produce it*, and the universal custom of the people, to repose during the hottest part of the day, aids in counteracting other unfavorable influences. The simplicity, too, of their diet and habits of life is not calculated to promote a state of excitability. Their food is mostly vegetable, with but a scanty and irregular supply of meat. Until of late they have made use of none of the stimulating condiments so *profusely* employed in *civilized* countries, their only drink is water. In their movements the natives are extremely moderate. They walk with a slow step, rest long, and often when tired, and placing no value on time, they do everything leisurely and to suit their convenience. * * With so entire an exemption from the existence of miasmata, there is also an entire exemption from those affections induced by it. Malignant bilious fevers do not occur, * * * derangements of the liver and biliary organs do not prevail, neither are the stomach and intestinal canal, and other organs of the abdominal viscera subject to the numerous and complicated affections so common in every miasmatic region."

Dr. Chapin then discusses, and the point may have an important bearing upon the disease I am considering, "some particulars of a cause (colds) which operates more extensively than any other morbid agent, and produces probably more than one half of all the diseases which exist, and more than three-quarters of all the idiopathic fevers on the islands." "The habitations of the natives," says the Doctor, "are for the most part considerably scattered, but in a few instances crowded together in such numbers as to exhibit the dense appearance of large towns and villages. There is, however, throughout an entire exemption from those pestiferous exhalations which so extensively poison the atmosphere of populous places in hot climates. All animal and vegetable substances thrown away by the people, or cast up by the sea, are quickly devoured by the number of

starving dogs and swine, so that no detriment is experienced from their putrefaction." but "the dwellings of the native population are merely slender frames of posts and poles tied together with strings and covered only with thatch. They are generally small, often so low as not to admit of standing erect within, and in their best condition serve as an imperfect protection from the wind and rain, and the excessive heat of a vertical sun. Every atmospheric change is quickly felt. Cold and dampness easily penetrate, and no sooner exist without than they are felt within. Add to this their leaky condition, the almost naked state of the inhabitants, their common practice of sleeping at night on the bare earth, outside of their houses, and their habit of continuing long in the water and exposing their bare bodies to strong currents of wind, when overcome with heat and perspiration, and it will not be surprising that diseases incident to such causes should abound. Fevers, induced thereby, are numerous."

CONSTRUCTION OF NATIVE HOUSES.

Now let me turn to the "Answers to Questions," proposed by the late Robert Crichton Wyllie, the faithful Minister of Hawaiian Kings, and addressed to all the missionaries on the Hawaiian Islands, May, 1846," and presented to the Hawaiian Legislature of 1848, and see what these gentlemen said in regard to the same subject. My reason for quoting so largely from these writers of forty years ago will be apparent later on.

Rev. T. Coan says: "Native houses are usually too small, too low, too dark, not well ventilated, too filthy and too perishable in their materials and construction."

Rev. J. S. Green says: "The native houses are certainly defective, exceedingly so. Most of them are without partitions. * * *

Still nearly all could make improvements in their style of building did they realize the importance to their physical and moral health of having comfortable dwellings."

Rev. E. W. Clark says: "The houses generally are grass huts, made of

them miserable. Some have permanent partitions, but not the majority. Less improvements have been made in houses and in dress and furniture. * * * Natives accustomed so long to a mere shelter, do not feel the inconvenience of their houses." Rev. R. Armstrong says: "The houses are generally too small, without ventilation, floors, windows, or partitions, and extremely unhealthy. Many are very damp from the ground as well as from the rain. Rev. B. W. Parker says: "The native houses are almost invariably small, poor and uncleanly." Rev. A. Bishop says: "The houses of the common people are defective in almost everything which constitutes civilization." Rev. J. S. Emerson says: "The native grass houses when well built, are probably more healthy than any others, if they are not suffered to be damp by having no floor. The convenience of windows would be great but expensive. Floors would greatly induce to health, partitions would aid much in advancing moral purity; but neither are much sought by the people at present." The Rev. Mr. Green says: "The method of living in small houses, having no partitions, and crowded with men, women and children is exceedingly unfavorable to the formation and strengthening of virtuous habits, but exceedingly favorable to the vicious propensities." Mr. Armstrong, in speaking of the licentiousness of the natives, observes, "The causes which lead to it are such as idleness, living in small and miserable houses, without partitions, a debased state of the moral feelings and the licentious conduct of many foreigners."

Let me again return to Dr. Chapin, and see what he has to say in regard to certain ailments of the native race which were also, probably, factors in the problem I am endeavoring to solve. On the subject of venereal diseases the Doctor says, (and in the absence of *proof* to the contrary I accept the statement with reservation and subject to the remarks I shall hereafter make.) "If it be a fact, that the aborigines of America were affected by syphilis and gonorrhœa before Europe-

ans visited them, or if, as is presumed by Dr. Thompson, 'syphilis has been thousands of times generated *de novo*, by impure intercourses,' it is certain neither disease existed, or was known at the Sandwich Islands before the visit of Captain Cook, in 1779. The natives had ever lived in the practice of promiscuous and almost unrestrained intercourse, so that the women were often unable to designate the father of their children; still their practises were not attended with those consequences which follow the licentious in all civilized countries. Those who have the credit of the discovery of the islands, and of exhibiting first to the astonished gaze of the simple and ignorant natives, some of the ingenious and useful implements of enlightened lands, * * * must also receive the credit of having introduced among these islanders two of the vilest and most loathsome diseases ever sent as a punishment for transgression. And upon the same page on which is recorded the benevolent efforts made to improve their condition and circumstances, * * * let it also be recorded that they entailed upon their beneficiaries, a disease which has 'grown with its growth and strengthened with its strength,' which has extended its course with destruction and death, till all portions of the group have become infected, and countless multitudes have fallen victims to its power. With such an introduction, the venereal disease has for the past fifty-seven years continued to spread and increase: perpetuated and extended too by almost every vessel which touched at the islands, till words would fail to express the wretchedness and woe which have been the result. *Foul ulcers, of many years' standing, both indolent and phagedenic, everywhere abound, and visages horribly deformed—eyes rendered blind, noses entirely destroyed, mouths monstrously drawn aside from their natural position, ulcerating palates, and almost useless arms and legs,* mark most clearly the state and progress of the disease among that injured and helpless people. I have seen more than one case of marasmus induced by the difficulty of mastication and degluti-

tion. The mouths of these patients were almost closed in the process of cicatrization, and the gums and fauces were destroyed by ulceration. In one of my patients suffering with the secondary symptoms of the disease, in which I was successful in stopping its progress by a mercurial course, the external nose had entirely disappeared, and its place was occupied by a concavity and a foramen of an irregularly oblong form. The left eye was totally blind, and both disfigured by ulceration as almost to lose their identity. The mouth was shockingly deformed; the lips and alveolar processes mostly removed by absorption, and the teeth having their necks and a portion of their roots divested of integuments, were irregular in their distances and positions, pointed in every direction, and but slenderly adapted to the purposes of utility. The whole countenance was disfigured by deep eschars, and the body greatly emaciated; no food could be masticated by him, so bad was the condition of his mouth."

In regard to cutaneous diseases and scrofula, the Doctor says: "Though the Sandwich Islanders are remarkably fond of the water and are fastidiously particular in their practices of washing and bathing, they are, nevertheless, extremely filthy and squalid in many of their habits of life. With their beasts and fowls in the same habitation, and not unfrequently on the same mats with themselves, their often repeated ablutions will be regarded as timely. The kapa, or native cloth, used by the inhabitants is worn without cleansing till having become foul with dirt and vermin, and too ragged to serve longer the purposes of covering or protection, it is lain aside. Hence diseases induced or exacerbated by such causes have at those islands a fruitful soil and flourish luxuriantly. The *itch* is extremely prevalent, and often assumes a virulence unseen in this country, the pustules sometimes becoming confluent are converted into large and troublesome ulcers. Other scabious affections exist. *Scrofula* is not only frequent but extremely malignant."

Now let me turn again to Mr. Wyllie's report in the connection, and examine the replies to the question regarding *diseases prevailing, contagious or epidemic*, but before so doing I desire to say a few words parenthetically to the foreign readers of this report. For many years the Hawaiians have been presented to the world as being inordinately licentious, utterly profligate, absolutely abandoned and worthless in character and wholly deficient in moral principles. The responsibility for this gross defamation of character, by countless exaggeration, must rest, in a large measure, upon those from whom I quote and their associates, friends and correspondents. It must be remembered that they were men of a strictly religious turn of mind, more adamant in pulpit and print against every infraction of the divine or moral law than the God Himself whose teachings they came to impart. They judged an indigenous aboriginal race *sinning in ignorance*, and learning *the sin of sinning* from white sailors, whom they at first regarded as equals, if not superior in power and knowledge to their would-be spiritual benefactors, as if these poor, generous, hospitable, loving and ignorant natives had had opportunities of learning to be immaculate and holy. The hardworking missionaries were few, and the libidinous foreign sailors numbered by the thousands, and while the one aimed to teach an entire change of life, manners, dress and customs with a somewhat severe and repressive hand, the other offered pleasure and profit unrestrained by thoughts of future pain and punishment. No more should the blame of sin, disease and defects in character be thrown upon the native race than the credit of their present high degree of intelligence and advancement should be entirely given to their spiritual teachers. The intellectual and material progress and the disease, and such debasement as may exist, must be accredited to foreign influence, to the teachers on the one hand and to the licentious white men on the other. Nor does this latter class include sailors alone, but even at the

present day it is largely made up of young white men whose family antecedents and position in life should make them defenders instead of destroyers of the native race.

But to resume, Mr. Coan says: "the principal diseases are of the venereal, scrofulous and cutaneous character. The climate, however, is remarkably healthy." Mr. Green says that no diseases prevail contagiously or epidemic in his district (Makawao). "Occasionally the influenza prevails; but on the whole, since I have resided among these people, they have been exempted from diseases to a remarkable extent." Mr. Bishop says: "No contagious diseases except *cutaneous eruptions* which are very prevalent and distressing. * * * But the most prevailing and mortal diseases are consequent upon the *venereal corruption* of the blood." Mr. Emerson says, "the itch and venereal diseases are destructively contagious."

It may not be amiss to say here, that the opinions I have quoted were written when the native race numbered three or four times more than the present population of 40,000, and that sixty years before they were computed at ten times as many.

But there is another dark chapter to be written before I pass on to the next chain in the link of tracing cause and effect, and again I quote from Mr. Wyllie's report. The question asked is: "How far is it (physical health) affected by the enervating effects of indolence and indifference, as to anything beyond the mere wants of animal existence?" Mr. Coan replies: "Physical, mental, and moral imbecility; disease and vice are extensively engendered, and sadly perpetuated by indolence and indifference to anything beyond the mere wants of animal existence." Mr. Green says: "Greatly affected. Nothing compared with these, as a source of suffering, both moral and physical. Here is the fruitful source of vice, misery and death. The nation is *rusting out*." Mr. Clark says; "Indolence here, as everywhere, has a debasing influence on the moral and

physical condition of the people. It is the mother of vice and disease. As artificial wants increase, the character of the people is generally elevated." Mr. Parker says, "Both the moral and physical health of the natives is most seriously affected (injured) by their indifference and improvidence." Mr. Bishop says: "Indolence is attended with enervating effects on the constitution. This is evinced in the females who have little to do, and yet they are more subject to sickness than the men. Perhaps there are other causes productive of sickness in many females: the consequence of vicious idleness." Mr. Emerson says: "This people are indolent, and many of them improvident: sickness and death are often the result of this improvidence. They have no beds for the sick, and no suitable food or diet in such cases. Their houses, mats and sleeping places often generate disease, and prevent the effects of suitable remedies, if administered, and often deter from the attempt to administer remedies that would be suitable, if circumstances would allow of their use. But whether this indolence and improvidence are peculiarly inherent in the Sandwich Islands, or the result of a system of oppression long practised, in connection with the absence of that stimulus produced by the artificial and imaginary wants connected with civilization is yet to be proved." Mr. Gulick says: "Very injurious, and to a considerable extent. Yet this indifference appears to be merely the result of the system by which, till recently, they were deprived of nearly all their rights, and thereby precluded from the hope of materially bettering their condition." Mr. Johnson only says: "I think the moral and physical health of this people is, in some degree, injured by indolence and indifference to the wants of both body and soul."

WHENCE THE DISEASE WAS DERIVED.

my report to your Honorable Body, in 1884, I beg to urge that Hawaii take a larger part in all of such researches. She is attacked by a terrible enemy. Let her study everything pertaining to its origin, resources, and favorable conditions. Leprosy, at times, attacked every race in the world; but its chief abiding places have been parts of Asia. Some of the islands of Malaysia have also been fecund hot-beds of the fell disease. In Java, and other islands of the great Archipelago, where the natives present most striking affinities with the Hawaiian race, the diseases that afflict them also afflict the Hawaiians. The Javans cast outcasts all who are suffering with the *kudig*, or leprosy, and the unfortunate ones have voluntarily segregated themselves upon small islands, where they are supplied with the means of subsistence by their friends." I added, and I am still of the same opinion, that, "I think it would be well that the disease which commands so large a share of public attention, and calls for so large an appropriation of the public revenue should be studied by competent authorities under Hawaiian auspices in various parts of Malaysia and Polynesia, where it is to be found."

I do not purpose to enter into a long ethnological discussion to trace the origin of the disease in this country, or if not its origin, a possible source for it, but I cannot refrain from touching upon the subject in partial connection with the origin of the Hawaiian race and the existence of leprosy in India from the most ancient times, as presented by the very valuable series of reports furnished by Her Imperial Majesty's Government of British India to His Majesty's Government.

My views on the origin of the Hawaiian and Malaysian races have been published and are known to those who take an interest in such subjects. While they may differ in a degree they coincide in the material point of origin with those of Judge Fornander, who in his work

on the Polynesian race, says: "I believe I can show that the Polynesian family can be traced directly as having occupied the Asiatic Archipelago from Sumatra to Timor, Gilolo, and the Philippines, previous to the occupation of that Archipel by the present Malay family; that traces, though faint and few, lead up through Deccan to the northwest part of India and the shores of the Persian Gulf; that, when other traces here fail, yet the language points farther north, to the Aryan stock in its earlier days, long before the Vedic irruption in India: and that for long ages the Polynesian family was the recipient of a Cushite civilization, and to such an extent as almost entirely to obscure its own consciousness of parentage and kindred to the Aryan stock." And again, "I hope to be enabled to show that the Polynesian family formerly occupied, as their places of residence the Asiatic Archipelago, and were at one time in the world's history closely connected by kindred, commerce, or by *conquest* with lands beyond, in Hindustan, the shores of the Persian Gulf, and even in Southern Arabia."

The Secretary to the Government of India states that at the present day "there appears to be at least three centers of comparatively intense prevalence, viz:

(a) The Beerbhoom and Bancoora districts in the districts in the lower provinces of Bengal;

(b) The Kumaun district in the Northwestern provinces;

(c) The Deccan and Konkan in the Bombay and Madras Presidency, respectively."

In other words that in, and surrounding the cradle, from which the great and ancient races from whose loins were derived the Hawaiians, the disease still prevails in the strongest form. Turning to page 80 of the Indian Report, I find a statement by Messrs. Lewis and Cunningham, Assistants to the Sanitary Commissioner of India, that "the disease has been known to exist in India for at least 3,000 years," but "with regard to our definite knowledge of its actual causation,

it is to be feared that we have not, except phraseologically, advanced very much on the etiological views recorded by Atreya many centuries before the Christian era, which were to the following effect: "When the seven elements of the body become vitiated through the irritation of the wind, the bile and the phlegm, they affect the skin, the flesh and the spittle, and the other humours of the body. These seven are the causes respectively of the seven varieties of *kushta* (leprosy)—the *kudig* of the Japanese. This *Atreya* lived at least 2000 years before the Christian era, and wrote the "*Charaka Samhita* on the pathology of the disease," extracts from which will be found on the pages above quoted. In these extracts he describes the various kinds of leprosy, the descriptions of which are already recognizable as forms of disease existing at the present day. He says: "the *kushta* thus produced cause much pain and suffering. None of these varieties result, however, from the vitiation of a single humour. *Kush-tas* are of seven, of eleven, or a larger number of a kind: and these constantly irritating the system become incurable. * * * The wind, the bile, and the phlegm, being vitiated, re-act on the skin, &c. When the wind is most vitiated it produces the *kadala kushta*, the bile, the *audumbara*, the phlegm the *mandala*, the wind and the bile the *rishyajihva*, the bile and the phlegm, and the wind the *sidhma*, and the three together the *kakanaka*." The causes of the disease *Atreya* gives as being: "Excessive physical exercise after exposure to too much heat or too much cold; taking food after surfeit; eating of fish with milk; using barley with several other grains, such as 'hayanaka,' 'dalaka,' 'karsdusa,' &c., along with venison, milk, curdled milk and butter milk; excessive sexual intercourse; long protracted excessive fear or labor; fatigue, interruption of catarrh, &c., vitiate the phlegm, the bile, and the wind; hence the skin and the three others become slackened. Thus irritated, the three elements corrupt the skin and others, and

produce 'kushta.' The premonitory symptoms of 'kushta' are as follows: Want or excess of perspiration, roughness, discoloration, itching and insensibility of the skin, pain, horripitation, eruption, and excessive pain on the parts that are about to fall off." "The worms that form in leprous eruptions destroy the flesh, skin, veins, muscles, and bones. When affected by them, the patient suffers from spontaneous discharges of blood, insensibility, loss of sensibility of the skin, mortification, thirst, fever, dysentery, burning, weakness, disrelish and indigestion. The 'kushta' becomes incurable."

THE LEPROSY OF THE BIBLE.

As regards the Biblical leprosy as defined by Moses in Leviticus, this might have been derived from the same original source. The book of Leviticus, according to accepted dates, was written subsequent even to that of Atreya by several centuries, and from quotations in the latter's writings it is certain that he was the earliest writer on the subject. The disease might have been introduced by the great migratory race founders into Arabia and thence into Egypt, and propagated among the Israelites during their bondage to the Egyptians, since we find in Deuteronomy, chapter 28, v. 27, the threat implying the fear and knowledge of the disease, "the Lord will smite thee with the botch of Egypt, and with the emerods, and with the scab, and with the itch, *whereof thou canst not be healed.*" It is not easy to decide from the Mosaical description of the disease whether the leprosy referred to was the 'kushta,' or some of the other varieties such as leucoderma, or white skin, but from the verse just quoted I am inclined to think that it existed even in its most deadly form. It will be noticed throughout the Bible, that it was invariably treated as an unclean disease, and one for which, in addition to obedience to the sanitary commands of the Priest, sacrificial atonement had to be made, as if for a violation of the moral as well as phy-

sical sanitary laws. I am also inclined to believe that it was more than a common cutaneous affection and was considered to be both contagious and infectious, for not only were the lepers set apart from the clean, but their clothing and even their homes were destroyed. That the Jews, as the world grew older, gradually became freer from the loathsome malady is probably due to their hygienic laws being far stricter than those of the other nations with whom they were brought into contact in their wanderings, either as a nation, sections of a nation, or as individuals. It is more than probable I think, that the germs of the disease, too, were being insidiously spread through Europe by the adventurers, navigators, discoverers and conquerors, developed by these ancient races long before the Crusades, the accepted modern date of its introduction into Europe.

HEREDITARY TRANSMISSION OF THE DISEASE.

Messrs. Lewis and Cunningham state "that the inhabitants of the Kumaun districts virtually consist of two classes only—Rajputs and Domes, the former representing an Aryan population, the latter an aboriginal people—whilst other classes are only very sparingly represented," and that in their cases, "the evidence, such as it is, is in favour of impartial distribution of the disease," but on the question of the heredity of the disease they say the evidence they produce from the Almorah Asylum, "allowing the fullest play to the possible influence of similarity of external conditions, points to the distribution of the disease by families and therefore to hereditary predisposition." They support their position by statistics which very strongly endorse similar views of other writers.

In view of the immense mass of testimony *pro* and *con* in regard to the hereditary transmission of the disease which forms part of my report; and yet which I think, in the main, will support to no little extent the view of a latent race predisposition in individuals of that race capable of being developed under conditions favorable

to the germinating of the disease germs I will pass on to the consideration of what has been observed in the descendants of the more ancient races, and of the more direct cognate races of the Hawaiians, not the modern Malays who are scarcely older in Malaysia than the Normans of the English conquest in England, but to the more ancient stock such as the Sundees, the Timorese and the ancient people of the Moluccas. These were recognized as the aborigines of the Country, whose language, religion, habits and ideas bear a stronger resemblance to those of Polynesia than any others of insular Asia, and among them to this day we find the same disease, as the Hawaiians are, and have been, subject to. Here leprosy has been known for generations and a system of voluntary segregation carried out. That is to say, lepers resorted to certain islands where they were occasionally visited by their friends who brought them their means of subsistence. In Tahiti, also, to judge from the description of travelers, a form of leprosy, or of elephantiasis, was known at least a hundred years ago.

Thus far I have endeavored to show that should leprosy be a disease upon which the influence of race has any effect, that influence must necessarily have its effect upon the Hawaiian race as the descendants and conquerors of those in whom the earliest seeds of that disease were implanted, and through whom, for generations after generations, the seed ripened and was re-implanted. In supporting this theory it is not necessary to hold that the sequence would be that the whole race should be diseased or even pre-disposed to disease, for we find that there is evidence from all parts of the world that, owing to circumstances, or perhaps in the absence of the necessary influences to nourish disease, the non-resistants are in a large majority. As a rule, too, the evidence shows that while the chiefs, and the "better classes" are occasionally attacked, the poorer, and practically servile classes, badly educated, sparsely clothed, ill-fed, and wretchedly housed, form the immense majority of the victims.

WHAT, THEN, IS LEPROSY ?

If asked my opinion of leprosy and how it originated, I will reply with the proper modesty of a layman,—not altogether unfamiliar with medical works on the subject, nor altogether unexperienced with the disease in this and other countries—in the presence of learned professional and scientific observers and writers, I do not know, nor apparently does any one, but I think that in all probability it is a disease caused in its earliest incipency by a demoralization of the system by uncleanness, not merely of the surface of the body,—for we find in India, especially, that some races that never wash enjoy an immunity from the disease—but of the blood, poisoned, perhaps, to a very great extent by a degraded condition of living, or by excessive indulgence of the animal nature in a tropical climate; for, so far as my reading extends, I may be permitted to say that the disease was not only originated in but has thriven better in hot than in cold climates; the exceptions of Norway and New Brunswick are comparatively minor ones in proportion to the leper populations of the tropical world.

While I am not prepared to consider the medical question of the relation of leprosy to syphilis, I am inclined to believe, and to say, that syphilitic blood poisoning has played no small part in the development of the disease in these Islands, in connection with the inherited disease and “constitutional taints” of the Islanders, such as are mentioned in the earlier portion of my report. I think that the mind, also, is no unimportant factor in aiding the propagation of the disease. I see no reason why, in the scheme of the Great Creator, the human body should not be placed on the same plane as the members of the animal and vegetable world in its relation to health and disease. Any gardener knows that by cultivation he can improve his flower and fruit, and by care and grafting and selection of seedlings create new varieties, and from a sorry crab

apple grow a Blenheim orange, or by the reverse process, by impoverished soil, thriftless untidiness and uncleanness deteriorate the plant or tree, poison not only its flowers and leaves through the sap but allow its bark to become the refuge and home of insects and fungi. The unhealthy plant not only produces no fruit but dies the lingering death of a leprous human being. And so it is with animals, inbreeding, or breeding with inferior stock deteriorates the original stock and the weak puny animals succumb to influences which the stronger resist.

But with this inscrutable malady of leprosy, as Dr. Tache, of Tracadie, says:* "There are some instances of such a *slow progress* and such an *attenuated malignity* of the ailment that life and even fair health are enjoyed for many years," and as Dr. Vandyke Carter, in speaking of the Norwegian lepers, says:† "But, while the coast-dwelling peasantry of Norway, in comparison with other (not all) countries of Europe, have admittedly long dwelt in a backward hygienic condition, living much on fish and potatoes, intermingling freely and being subject to overcrowding during their long winters; still, on the other hand, it is notorious that they are an unusually well developed and long-lived race; and besides, individual lepers are, as often as others, even robust people," and yet, to quote Dr. Moore, the leper must be in "a state of human system below par," and therein in spite of the apparent strongly built physical frame lies the whole secret of the disease, and its remedy,—a remedy not for the generation inheriting it, but for the survivors, not only for the absolutely healthy ones but also for those, even, in whom the disease germs may be lying dormant, only waiting to be destroyed by wise and sanitary culture or to be nourished into virulent life by baleful encouragement.

* Page 137, Foreign Reports.

† Page 91, Foreign Reports.

A PROBABLE CAUSE FOR ITS SUDDEN DEVELOPMENT.

Having thus far endeavored to show that the disease has been possibly dormant in the Hawaiian blood for many centuries, appearing, probably, in individual cases to a greater or less degree before we, of a foreign race, were brought into contact with them, let me now proceed to give my reasons for its apparently unexpected outbreak twenty or thirty years ago, or at the era when it was first brought to the cognizance of the Hawaiian Government.

Accepting Fornander's views that "that branch of the Polynesian family, from which the oldest ruling line of Hawaiian chiefs claim descent, arrived at the Hawaiian group during the sixth century of the Christian era," we have a history of nearly eleven centuries of a race living in practical non-contact with a white population. And furthermore of a race which was in earlier times according to Mr. Horatio Hale so prolific that it threw off its "too-redundant population by migratory expeditions" to various islands of the Pacific, to Easter island and the Hawaiian group for instance, and occupied "over three thousand years for this gradual process of redundancy and relief."

Cook and the earlier writers estimated the population of the Hawaiian group, only a little more than a century ago, at nearly half a million inhabitants. These people were practically governed as were Europeans in the earliest and most tyrannical days of early feudalism. Their lives, virtue and property, such as a semi-servile feudal class might possess, were at the mercy and will of the chiefs from the highest to the lowest in turn. Their food must necessarily have consisted principally of a vegetable and fish diet, with swine and dogs, or some small animals for—since cattle were unknown before the advent of foreigners—animal food, and for a beverage, water or products of roots, bark, etc. They were, however, in their primitive style of living, strong, robust and healthy, living and loving as sons and

daughters of the sun and sea, but intermarrying and inbreeding, as passion, or caprice, dictated. Of their diseases we have no reliable record at hand, but it is not unreasonable to presume that they possessed the morbid taints of their ancestors, and their ills were treated much in the same way as in the earlier days of the transition period by the native *kahunas*, or doctors and sorcerers; a treatment which apparently was a trust in the native Gods and the resistant powers of the patient, assisted by a rude knowledge of the medicinal power of herbs, roots and earths.

THE LATENT FLAME BURSTS FORTH.

The first spark that ignited the latent flame of disease and death was undoubtedly the arrival of the first foreign ship—be it Capt. Cook's or another's. It is unnecessary to repeat the statements of early writers as to the rapidity with which the poor, ignorant, simple and innocent minded natives were impregnated with one of the most foul and loathsome diseases that nature has inflicted upon man for outraging her laws. The disease was sown, and being neglected it increased in malignity and virulence, as it was passed around promiscuously from body to body. No mercy was shown to any, the women flocked to the sea ports, the white Gods, so regarded by these unhappy creatures, passionate, reckless and unscrupulous, after their long voyages and abstinence, sacrificed them by the hundreds to the bloody Moloch of their lusts. Inbred by generations, reinvigorated by the pestiferous embraces of thousands of white men it became perpetuated in the blood of those who yielded to temptation. When I remember that in the last 75 years at least a quarter of a million of men, of the white race principally sailors, in visiting the shores of these islands have indulged in unrestrained intercourse with the poor women of these islands, I am not surprised at the reduction of the population so much as the fact that so many remain, Bear in mind, too, that with the bold disorderly life of

white men, came the white man's poisonous narcotics and intoxicants to again change and enfeeble the blood of the race. Mentally, too, the lower classes were probably debilitated by the oppression of their chiefs and the hard and unusual labors imposed upon them by their task masters. In the ruins and remnants of the *heiaus* or temples may we not read a record of lives lost and bodily constitutions wrecked. All this time the diseased and blood impoverished natives were living in their primitive manner in their grass huts, the general condition of which I have already described, and sleeping, the diseased with the healthy, upon one mat and under one *tapa*, or bark woven covering. A whole family, irrespective of age or sex, receiving from each other's heated bodies the disease-laden or disease-creating exudations. Surely I might almost stop here and claim that the diseased of the nation almost courted death by the conditions they had at first so unwittingly accepted and subsequently so unhappily carried out.

THE EFFECT OF THE TRANSITION PERIOD.

The next stage is the one that marks the unprecedentedly rapid transition of the Hawaiian race from so-called barbarism to Christianity and civilization, from the darkness of heathenism to intellectual life and physical death,—for the change has cost the lives of hundreds of thousands of souls. Let me say that I am aware that in presenting my views upon the source and partial cause of leprosy in the Hawaiian Islands, I am treading on dangerous ground from a medical and scientific standpoint, and am falling counter to accepted authorities, and furthermore am partially upholding the theory of spontaneity and syphilitic cachexia in connection with race-hereditariness and predisposition. I am willing to accept the responsibility in a degree, for I think the facts justify me in believing that each has had a marked influence on the disease on these Islands, and that the abatement of the disease depends to some extent upon their consideration.

I think that the advent of the foreign missionaries here, about the year 1820, may be conveniently accepted as the practical inauguration of the transition period. It is not within the province of this report to describe the noble works which they, and their successors of other creeds, have done in the way of educating our people. Their work, in this regard, justifies them. In promoting the health of the people by education in sanitary and moral laws and enlightening the mind of the Hawaiian generally, they have righteously followed the precepts of their Master. If, by the light of subsequent events, faults were made they must be attributed to an error of judgment, to the error of dealing with the Hawaiian race, in ignorance of the characteristics and history of the race, with too firm a hand, and too high a pressure propelling them on the road to advancement. In a word the should-have-been labor of a century was condensed into less than a generation of time. In so rapid a change in the life and character of an aboriginal race both mind and body must necessarily suffer. To partially clothe a naked race with uncongenial garments, worn in heated rooms and discarded as soon as possible, entailed upon the native race, a large number of constitution-weakening diseases, and more especially in cutaneous forms. Strictness of life in public gave way to hidden sin and deceit, and reticence of disease ensued for *fear* of disfavor or punishment. In lieu of the oppression of the chiefs came the more dreadful—to an aboriginal race—oppression of civilization. Foreign intercourse brought new and foreign diseases, and the pernicious body weakening customs and habits of foreigners. And all this time, too, fresh hordes of diseased men were propagating afresh with unhealthy women old diseases. The nation's strength had been previously sorely tested by epidemics which had swept away their tens of thousands in great swaths, showing that the once strong bodies had become debilitated. Small pox had been introduced into the land and claimed its victims by the legion,

measles and other fevers followed, and diseases which, under other conditions, would have lightly passed through the ranks counted their dead by the scores. The once-prolific race had become sterile. Given the population of 142,000 in 1823 had in thirty years (1853) been reduced to 73,000, and in twenty years more (1873) to 56,000, or a loss of 86,000—or more than double the present population—in fifty years, and so they steadily died off. Is it a wonder that as the living think of their many lost friends they feel heart despondent and hopeless, and perhaps too regardless of the health of themselves and families? Is it to be wondered at that only the bravest and strongest did not become discouraged, and are not now as much weakened in mind as in body?

But there are two more causes which, in my judgment, have had a great effect in the propagation of leprosy, or diseases closely allied to it, although medically it be a disease *sui-generis*. The first was the ignorance of some of the early and unqualified medical practitioners who were permitted to spread disease broadcast, and to do irretrievable injury before retribution overtook them, but the second and chief cause was the indiscriminate, and to my mind careless vaccination that began about 1868. It is stated in the records of the Board of Health that a respected physician, now resident on the Islands was informed that "the usual price of 25 cents for each successful vaccination was to be reduced to 12½ cents, as some physicians, here in Honolulu, had vaccinated persons, and one of them 2,500 for a stipulated sum of \$75,—or 3 cents apiece and providing the vaccine virus apparently. Dr. Arning on page XLIV says in regard to this subject: "You are doubtlessly aware of the very prevalent opinion among medical men that the unusually rapid spread of the disease may possibly be attributed to the great amount of indiscriminate vaccination which has been carried on in these islands. There have, if my information is correct, unquestionably new centres of

leprosy developed after vaccination was practiced and several old inhabitants have told me, how they themselves used no precautions whatever in vaccinating during a small-pox scare, but brought the lymph directly from one arm to another without even wiping either points or lancet." As we have not yet discovered whether the disease can be conveyed by inoculation,* nor how long the germs thus implanted into the body may be dormant before becoming productive or destroyed, I can only state that the impression is strong in the minds of many that a number of cases have thus been inoculated with leprosy. As regards the experimental inoculation of Keanu, the condemned convict, a report as to his present condition will be found in the Appendix.

I will now consider the question of contagion in so far as, in my opinion, it bears upon the spread of the disease on these Islands.

THE CONTAGION OF LEPROSY.

I think that the evidence presented to you in the several reports of the Board of Health, and of the medical staff of the Government since the medical administration of Drs. Hoffmann, Hillebrand and Hutchison to that of Drs. Mouritz, Arning and others, and the, hitherto unpublished, cases to be found in the Supplement to this report, justifies the stand the Hawaiian Government has taken in believing that the disease, as it appears in this Archipelago, is to a limited degree contagious among the Hawaiian race provided there are strong predisposing and favorable conditions which create "a certain weakness to resist its attacks." That it is only mildly contagious, and then only under the most favoring circumstances, among the white races, is to my mind, absolutely proven by the fact that the cases of leprosy among the white population are so few in proportion to the number who have been brought into

* Vide Tracadie Report, page 142.

the closest contact with the disease, and I will repeat here views expressed on the dedication of the Kapiolani Home: "I have no hesitation in saying that the question (of contagion) is one that has a remoter interest than what is popularly entertained, especially abroad, inasmuch as while admitting that the malady is contagious under the most favorable conditions, yet it does not seem to be more so than many common diseases, the result of an impaired condition of blood, which are generally accepted as being non-contagious, and only become so through peculiarly favorable and strongly corresponding circumstances. Certainly there is nothing in the history of the disease, or attaching to it, to cause the foreigners visiting our shores, to be in the slightest degree apprehensive of danger." I think it can be asserted without fear of contradiction that there has not been a single case of leprosy among the white or foreign population that was not connected with long and intimate association with those of the native race either having, or predisposed to, the disease. The case of Rev. Father Damien, referred to in the reports of Drs. Mouritz and Arling, is the most interesting and valuable one in connection with the question of contagion. As far back as December, 1877, this faithful servant of Christ wrote to His Excellency J. Mott Smith, then President of the Board of Health, "I shall endeavor to do all I can for the benefit of the Board, and also of the sick people here. * * * You are aware *that for the general welfare of the lepers I have sacrificed my health and all I have in the world*, and in consequence you may trust me."

To those acquainted with the strictness and purity of life of such men as enroll themselves in the ranks of the Christian Army as true soldiers, and especially the men of the stamp and mould of mind of Father Damien, it is unnecessary to say that the inducements to the disease, too frequently met with among laymen, are wanting, and consequently the true contagious and infectious elements of the malady may be more correct-

ly analyzed from his case than from any other. In his report the Rev. Father gives us but a modest and partial insight into the terribly trying life of 13 years among the lepers. Thirteen years in the closest contact with "a distemper so noisome, that it might pass for the utmost corruption of the human body on this side of the grave." Inhaling fetid breaths, cleansing the horrible ulcers, watching over the dying and handling the semi-putrid cadavers, living, eating, sleeping in an atmosphere polluted with disease, having his food cooked by a leper, and surrounded by such an aggregation of foulness, an escape from contracting the disease would have been regarded as miraculous. I think that this case taken in conjunction with the fact that the foreign portion of the community have been practically free from the disease is sufficiently conclusive to enable me to reiterate my belief that there is no ground for alarm for white people from the disease. The very valuable tables, prepared by Dr. Mouritz and others, which I elsewhere present to you, will I think convince you that we may at length hope that not only has this dread malady been checked and to a great extent controlled but that it is less virulent and malignant in character. I think we are justified in taking, in respect to the disease, a hopeful view of the future. Our duty though must be to closely watch the rising generation while we endeavor to ameliorate the condition of the sufferers. In dealing with this question let us, as Hawaiians, remember that we set an example to the world in the spirit with which we have treated the leper. The unfortunate has not been, and should not be, regarded as a mere outcast, as in other countries, whose life was an eyesore and a burden to the community, and whose death was desired. Even admitting that all attempts to cure this dread disease which has baffled the medical skill of ages have failed, yet we should not abandon our leprous brethren in despair; but we should continue to treat them and to care for them in a spirit of love and hope. Above all we should try to make the sufferers

as contented and comfortable as we can. If we cannot cure the disease we can at any rate alleviate the condition and pains of our lepers. I feel satisfied that in the improved condition of the lepers at the branch hospital since the Sisters of Charity were placed in charge may be found a suggestion upon which we may act in dealing with the disease on Molokai. With a better supply of water now assured, the course of treatment and the line of conduct which is apparently tending towards satisfactory results at Kakaako might be attempted on a larger scale at the leper settlement.

You will notice by the accompanying reports that I have furnished you with all the information I was permitted to obtain in regard to this disease and to its treatment in this and other countries. You will find the opinions of professional men frequently in conflict, but even in this divergence of ideas you may find much of value.

PRACTICAL WORK OR SCIENTIFIC INVESTIGATION.

After the somewhat costly experience, with practically inadequate results, in the purely scientific investigation of leprosy, I feel inclined, though with some reluctance, to urge the more practical method rather than the merely scientific. No one appreciates more highly than myself the interest and beauty of microscopical and technical research, and more especially when combined with possible practical results of vast importance to the health of the community, but on the other hand standing, with my colleagues, as a trustee of this Nation I feel it my duty to urge that expenditures for purely scientific research shall not be of the unknown and never-ending quantity, but in proportion to the value received by the Government and people and not merely to the individual making them. Leprosy has so far baffled science even among nations who can conduct their special examinations upon a grander scale than we can, yet there are results from these investigations of which we may make practical use with present,

if only temporary, profit and improvement to the suffering patients. It should be our aim then for to devote our actions and legislation in this more practical direction. But we shall never do very much good as long as certain political elements regard this question of leprosy as a political factor in the control of service to the country. It must be regarded from a humanitarian and benevolent, and not from a political stand point. The health and welfare of the people is our paramount duty and I feel assured it will be your greatest pride to promote. In ages past, when lepers were regarded with the greatest sternness and held in the greatest dread and abhorrence, the noblest examples of public and private benevolence have been provided for us. In the seventh century, merchants established in Jerusalem the Hospital of St. John where the Johannites attended upon the sick lepers, and a "little later," as Dr. Living informs us, "the remarkable society of the Knights of St. Lazarus was founded, in order that the lepers of higher classes might not be deprived of their knightly honors and fame. These knights were employed in superintending the leper hospitals and providing for the wants of the inmates." And still later on under the influence of religious orders, "kind and considerate treatment for the unfortunate lepers was strongly inculcated and consolations were frequently given; by some indeed they were looked upon as martyrs, and were treated with far more kindness and compassion than they now meet with in Eastern or even European countries."

The old historian Matthew Paris relates the following interesting story:—

"David, King of Scotland, the brother of Matilda, Queen of the English, came to England to visit his sister (in the year 1105), and when on a certain evening he came by invitation to her chamber, he found the house filled with lepers, and the Queen standing in the midst; having laid aside her cloak she with both her hands girded herself with a towel, and water being placed in readiness, she began to wash their feet and

wipe them with the towel, and taking their feet in her hands, kissed them with the utmost devotion. Upon which her brother addressed her thus: 'What is this which you are doing, my Lady? In truth if the King knew this, he would never deign to kiss with his lips your mouth, contaminated by the pollution of the lepers' feet.' And she, smiling, replied, 'Who knows not that the *feet* of an eternal King are to be preferred to the *lips* of an earthly one? Behold, it was for this that I invited you, dearest brother, that you might learn, by my example, to perform similar actions. Do, I beseech, that which you see me doing.' "

King Robert Bruce of Scotland, who was suspected of being a leper, founded near the town of Air a hospital for lepers. Then, too, let us bear in mind that Christ "moved with compassion, put forth his hand, and touched a leper, and said unto him, 'I will: be thou clean,' " and immediately the leprosy departed from the man and he was cleansed.

OPPORTUNITIES FOR CHRISTIAN BENEVOLENCE.

In modern times true Christian benevolence plays an important part in the treatment of the lepers. Out of the sixteen leper asylums in the great empire of British India two are wholly supported by private charity and five partially so. Here, in Hawaii, also, we are not behind hand, for in the noble devotion of the Sisters at Kakaako, Father Damien's self-sacrifice at Molokai, the Queen's Hospital and Kapiolani Home we have a good nucleus of charitable work from which private benevolence may expand. In tending the sick, clothing the poor, and cheering up the downhearted, in providing for them little luxuries and making them more comfortable and contented, is a field open to all who understand their duties and have warm and courageous hearts. In this field experience shows that ladies inspired by Christian love are more courageous, or moved by a stronger faith than men, for they do not touch the sufferer with a hesitating finger but in the spirit of the

most devoted Christian charity, such as animated a Queen Matilda of England, or a Queen Elizabeth of Hungary, lay hands upon the outcasts to help them, and lighten their sad lot in life. The Sisters of Charity at Kakaako have completely, with their quiet but firm methods, revolutionized the condition of the lepers and in a few short months turned an abode of despair into almost a comfortable home; so that in the interest of the sufferers of this nation I pray that their noble example may be supplemented by a sympathizing co-operation from private sources.

▲Another matter that is within the scope of private benevolence, and a proposal in regard to which I recently made to a committee of gentlemen—appointed in Dr. Årning's interest—in the hope and desire that it would be accepted, is a more thorough study of the disease in the great foci of Molokai, wherein can be found every type and condition of the malady. What can be accomplished by a willing and conscientious man in a comparatively short time is patent to all who will study the reports and tables of Dr. Mouritz, the most complete ever furnished to this Government. The trouble hitherto experienced by the Government has been in obtaining a true resident physician at the settlement. While professedly zealous in the cause of true science and jealous of the claimed reputation of humanity, charity and love for the suffering, attractions of the capital have apparently been greater, among some of these professors, than the opportunity of enlightening the world and benefitting mankind. The true scientific student, like the Father Damien of religion, will go where he can learn the most and do the most good, and I feel assured that this honorable body will never be averse to assisting private benevolence in encouraging such men. Such men take their chances of loss of friends, and sometimes even of loss of health and life, but their fame and the beneficial results they bequeath to humanity are substantial rewards enough for them. The country wants for its

suffering lepers more noble men and women to attend to their needs, nurse and help them. It wants a cordial and charitable co-operation between people and Government. Their gracious Majesties and other members of the royal family have furnished bright examples of their love for these poor people and I trust there are many to be found to support them by good deeds. The sympathetic human heart, moving a soft and gentle hand, and a kindly eye ever bright and ready to cheer will go farther in the treatment of our decaying people than subtle scientific investigations carried on in a spirit of self-heartedness. The Hawaiian race is mentally depressed as well as physically ill and it is encouragement to the mind and heart that is required. It must be aided in the spirit of the Divine love which actuates the Sisters of Charity and their associates in charity all over the world, and not in the stern scientific methods of Faculties, whether of London, Paris, Berlin, New York or elsewhere. Hope and confidence must be inspired into the drooping hearts of our suffering people, and they must be nursed with love and kindly advice, as well as administered to scientifically or experimentally.

THE JAPANESE HOSPITAL TREATMENT.

In my general Health Report to the Legislature, I have called attention to the recent improvements made at the Branch Hospital, at Kakaako, in connection with the system of treatment adopted by Dr. M. Goto, but I deem it necessary, also, to refer to the subject here, as being one of more than ordinary interest.

Dr. M. Goto, after some experience with his father, Dr. Shobun Goto, of the Kihai Hospital, Tokio, Japan, in the treatment of leprosy, was invited to come to this country to give a fair trial to the Japanese hospital method of cure. This method had particularly attracted the notice of His Majesty the King during his visit to the Japanese Empire, and, through His Majesty's love for his suffering subjects, resulted in the invitation to Dr. M. Goto to pay his Kingdom a visit.

This treatment had already been satisfactorily tested by a gentleman, declared by medical men to be afflicted with leprosy, but who after a twelve month's stay at the Kihai Hospital as a patient, returned to this country in perfect health. The method may, in brief, be stated to be medicated warm baths accompanied with regular therapeutic and dietetic treatment, the details of which will be found to some extent in Dr. Goto's own report.

That the Doctor has, so far, met with marked success with the patients at Kakaako placed in his care is indisputable. I am enabled to state, from my own observation, that men and women, who were placed in his hands, with dead looking and badly marked skins, numbed and incapable of performing a healthy perspiratory function, have been restored to normal healthiness and action, accompanied with a new growth of hair upon parts formerly affected, with the texture of the skin made soft and smooth, eyes bright and clear, a lively sensibility promoted in the former numb parts and general health correspondingly improved. Foul ulcers have been cleansed and closed and helpless atrophied members again made active. After former experience in this direction of curative or palliative measures, I do not desire to speak too sanguinely, but it is, undoubtedly, the unanimous opinion of all those most interested—the patients themselves—that Dr. Goto's treatment has been attended with an apparent marked success never before observed on these Islands. There is evidently nothing occult or mysterious about the treatment, which is simply a combination of cleanliness, comfort, good nourishing food, and medical treatment with drugs, tonics and barks well known, but perhaps not sufficiently investigated and tested as to their merits, by the average medical practitioners. Perhaps in the stimulative bark of the *Æsculus Turbinata*, known to the Japanese as Hichyo and Tochi, there may be greater virtues than in any medicine hitherto used. It is no longer a professional secret, as a leading medical

journal tells us, that, many of the most valuable formulas of the modern *Materia Medica* are derived from "old women's remedies," and others from, once-called, empirical nostrums. But, in no case should the successful result be attributed to medicine alone, for whatever may be the virtues of the remedies used, it is to the kindly and attentive physician, and the patient, watchful nurse that the true credit of healing mainly belongs.

The medicinal virtues of Dr. Goto's treatment are aided by his faithful and assiduous attention to the requirements of his patients. He is fortunate, too, in having to assist him the Sisters of the Hospital who carry out the physician's instructions with unremitting care and a kind attention. It is only a reasonable presumption that, under such circumstances, a system of treatment so patiently and thoroughly adhered to must result beneficially to the sick.

Is it not worth while even if we do not, for the present, dare to hope for an absolute cure—to strive to do as much as we can for our suffering countrymen; to restore the apparent bloom of health to the cheek; to brighten the eyes; to release the contracted muscles; to give back life and sensibility to the numbed flesh and limbs and enable the patient to feel more cheerful and hopeful? I am sure this Honorable Body will agree with me that it is, and, furthermore, that, in spite of the opposition of those who disagree with this special treatment, the success of Dr. Goto, so far, has raised in us the highest hope of greater beneficial results for our suffering people. But the result is only made possible by having faithful nurses to carry out the method of treatment.

THE QUESTION OF SEGREGATION.

This is a measure fraught with the deepest interest to a very large portion of the Hawaiian people. It is a question involving loss of liberty and separation from home and friends, to hundreds, nay, thousands, who have committed no offense against the laws of the country.

While recognizing the contagiousness of this dread malady under certain favorable conditions, and the fact that its first indications are hardly recognizable to the most observant eye, there can, I think, be no question that it is not contagious under casual circumstances. No contagion can arise from passing a leper on the street, sitting in the same room with him occasionally, or shaking hands, except, perhaps, that a broken skin might afford an opportunity for doubtful inoculation:—doubtful, as it has not yet been satisfactorily decided that the disease is inoculable. I feel inclined to believe that greater danger may arise from inhalation than from inoculation, and in this view I think I am sustained by some of the leading medical minds. But it is always wise to separate the diseased from the healthy and, especially, to break up that too close intimacy,—whether of family or otherwise,—which unfortunately, through want of knowledge on the part of Hawaiians, too often exists between the sick and the healthy. Hawaiians certainly are beginning to appreciate more and more the fact that it is wise that well developed cases of leprosy should not live with the clean and healthy, but they also feel, as I do, that the practice of herding all the sick in one place of exile is a hardship with doubtful results. If segregation can be carried out in ways, equally beneficial, but, more in harmony with the wishes of the people it should be done. While it is well for the community that a sufferer from any form of contagious disease should leave his home, it is hardly necessary to compel him to leave his native island. There would seem to be no valid reason why an experiment of local segregation should not be made in this regard on Kauai, as has been proposed, where a retreat has been selected and where families having a diseased member might there place their suffering relative and attend to his wants, and be nearer to him than if doomed to Molokai. The Government would be willing to provide any reasonable measures of relief as well as

furnish medicines. Where a community is found willing to voluntarily segregate its own sick and care for them, why should a government be called upon to expend large sums for a plan of segregation which can never be thoroughly carried out, bearing in mind the occult and mysterious nature of the disease in its long term of incubation and development?

And now in conclusion I beg to say that while I have endeavored to place clearly before you the very valuable information I have received, on behalf of His Majesty's Government, from foreign authorities on the subject of leprosy, I have endeavored to reciprocate on behalf of His Majesty the courtesies of other nations, to whom the Kingdom must, I am sure, feel grateful, by showing them the work that has been done in the past, and is now being done here. I am very well satisfied that where public spirit and benevolence has accomplished so much in our country, we shall not stand still but march on with redoubled effort, and with a hope and a trust that it may be Hawaii's glory to achieve such a control of this dread malady, the curse of all ages, that her name shall be honored among the nations, as a conqueror under the leadership of Love for all, Charity for the sick, and Hospitality to the stranger, the three great Marshals of the Grand Army of Peace.

GOD SAVE THE KING!

WALTER M. GIBSON,

President of the Board of Health.